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(FILE 'HOME' ENTERED AT 12:36:59 ON 22 OCT 2002)

FILE 'MEDLINE, CANCERLIT, CAPLUS, BIOTECHDS, EMBASE' ENTERED AT 12:37:19  
ON 22 OCT 2002

L1 1350013 S ADENOVIR? OR RETROVIR? OR VIRAL OR VIRUS  
L2 3884 S CATIONIC LIPID OR CATIONIC LIPOSOME  
L3 1043 S L2 AND L1  
L4 210301 S DIAMETER  
L5 18 S L4 AND L3  
L6 11 DUP REM L5 (7 DUPLICATES REMOVED)  
L7 699744 S BOUND OR ENCAPSULATED  
L8 66 S L7 AND L3  
L9 29 DUP REM L8 (37 DUPLICATES REMOVED)  
L10 4028 S CONDENS? AND L1  
L11 57 S L10 AND L2  
L12 28 DUP REM L11 (29 DUPLICATES REMOVED)

=>

L6 ANSWER 7 OF 11 BIOTECHDS COPYRIGHT 2002 THOMSON DERWENT AND ISI  
AN 1997-13269 BIOTECHDS  
TI Novel supramolecular assemblies for gene transfer;  
lipid-entrapped polycation-condensed DNA composition for use in  
lipofection and gene therapy (conference abstract)  
AU Huang L  
CS Univ.Pittsburgh  
LO University of Pittsburgh, Department of Pharmacology, W1351 Biomedical  
Science Tower, Pittsburgh, PA 15261, USA.  
SO Abstr.Pap.Am.Chem.Soc.; (1997) 213 Meet., Pt.2, PMSE306  
CODEN: ACSRAL ISSN: 0065-7727  
American Chemical Society, 213th ACS National Meeting, San Francisco, CA,  
13-17 April, 1997.  
DT Journal  
LA English  
AB The relatively non-toxic and efficient **cationic liposome** formulation DC-Chol-DOPE has been used in 2 separate clinical trials for immunotherapy of cancer and gene therapy of cystic fibrosis. Two types of novel condensed structure containing DNA polycation and lipids have been developed. These lipid-entrapped polycation-condensed DNA (LPD) particles are small (under 100 nm in **diameter**), monodispersed and colloidally stable. Transfection activity of LPD is similar to that of adeno **virus** vectors, and is 10- to 100-fold higher than that of first-generation cationic liposomes. LPD-I particles are cationic and used primarily in local and regional delivery routes. LPD-II particles are anionic and may be made target-specific by attaching specific ligands on the surface. Parenteral use of these novel particles for systemic gene transfer is under development. Recently, reconstituted chylomicron remnants have been used to solubilize DNA-**cationic lipid** complexes. This new non-**virus** vector induces high-level transgene expression in the liver. These formulations were discussed in terms of their efficiency, toxicity and uses in gene therapy. (0 ref)

L9 ANSWER 28 OF 29 CAPLUS COPYRIGHT 2002 ACS

AN 1994:571553 CAPLUS

DN 121:171553

TI Transfection of plant protoplasts with tobacco mosaic **virus** RNA  
by using electroporation, PEG and **cationic liposome**  
-mediated methods

AU Yuan, Tianhua; Wu, Jianhua; Gong, Zuxun; Yang, Jingping; Lin, Qishui  
CS Shanghai Inst. Biochem., Acad. Sin., Shanghai, 200031, Peop. Rep. China  
SO Shengwu Huaxue Yu Shengwu Wuli Xuebao (1994), 26(1), 7-13  
CODEN: SHWPAU; ISSN: 0582-9879

DT Journal

LA Chinese

AB Tobacco mosaic **virus** RNA was introduced into protoplasts from  
tobacco (*Nicotiana tabacum* L. cv. Bright Yellow) and Chinese cabbage  
(*Brassica chinensis*) by electroporation, PEG treatments and  
**cationic liposome**-mediated methods. The results  
indicated that although both of electroporation and PEG treatment methods  
could introduce TMV-RNA into protoplasts, **cationic**  
**liposome**-mediated methods could enhance infection significantly.  
The min. amt. of TMV-RNA necessary for transfection of protoplasts  
decreased down to 10 times, when the TMV-RNA mols. were  
**encapsulated** before introduction into protoplasts by  
electroporation or PEG treatment. The results also showed that TMV could  
multiply inside protoplasts and reach the max. after 48 h of introduction  
of TMV-RNA. SDS-PAGE of the roughly extd. solns. of transfected  
protoplasts at 48 h after introduction of TMV-RNA showed that a 17.5 kd  
band, the mol. wt. of which is equal to TMV coat protein clearly appeared  
and besides, there also a 50-55 kd protein band could be obsd. from these  
transfected protoplasts.

L9 ANSWER 26 OF 29 BIOTECHDS COPYRIGHT 2002 THOMSON DERWENT AND ISI  
 AN 1995-12639 BIOTECHDS  
 TI Adeno **viral** mediated cell transfection;  
     receptor-mediated gene transfer to e.g. human cell in vivo using  
     wild-type or inactivated **virus** or empty capsid, optionally  
     with lipofection, e.g. for gene therapy  
 AU Seth P; Crystal R G; Rosenfeld M; Yoshimura K; Jesse J A  
 PA U.S.Dep.Health-Hum.Serv.; Life-Technol.  
 PI WO 9521259 10 Aug 1995  
 AI WO 1995-US924 24 Jan 1995  
 PRAI US 1994-191669 4 Feb 1994  
 DT Patent  
 LA English  
 OS WPI: 1995-283779 [37]  
 AB A new method for introducing a nucleic acid (NA) (DNA, RNA or peptide  
     nucleic acid) into a eukaryotic cell (mammal, bird or fish, especially  
     ungulate, cat, dog or human) in vivo or in vitro involves contact of the  
     cell with the NA and an adeno **virus** (Ad), where the NA is not  
     **bound** to a molecule. The cell is contacted with the Ad less than  
     8 hr (especially less than 2 hr) before or after contact with NA. The  
     adeno **virus** (wild-type or modified to become  
     replication-deficient) is present at 20-2,000 pfu/cell. The modification  
     is an insertion, rearrangement, deletion, replacement, methylation,  
     demethylation or mutagenesis, and alters cell binding, endosomal lysis or  
     intracellular targeting. The Ad may be in empty capsid form, or  
     inactivated. A cationic agent, e.g. a polycarbene, 1,5-dimethyl-1,5-  
     dizaundecamethylene polymethobromide or a **cationic**  
     **liposome** may be mixed with the NA and used to effect entry into  
     the cell. The Ad transfers cargo molecules into the cell nucleus by  
     receptor-mediated endocytosis. Unlike previous methods, this method may  
     be used in vivo, and overcomes fusion difficulties, nucleic acid  
     degradation and toxicity problems. (66pp)

L9 ANSWER 25 OF 29 MEDLINE  
 AN 97261594 MEDLINE  
 DN 97261594 PubMed ID: 9107521  
 TI Lipidic vector systems for gene transfer.  
 AU Lee R J; Huang L  
 CS Endocyte, Inc., West Lafayette, IN 47906, USA.. leer@endocyte.wintek.com  
 SO CRITICAL REVIEWS IN THERAPEUTIC DRUG CARRIER SYSTEMS, (1997) 14 (2)  
 173-206. Ref: 67  
 Journal code: 8511159. ISSN: 0743-4863.  
 CY United States  
 DT Journal; Article; (JOURNAL ARTICLE)  
 General Review; (REVIEW)  
 (REVIEW, TUTORIAL)  
 LA English  
 FS Priority Journals  
 EM 199707  
 ED Entered STN: 19970716  
 Last Updated on STN: 19970716  
 Entered Medline: 19970702  
 AB Clinical application of gene therapy depends on the development of  
 suitable gene transfer vehicles (vectors). Although generally not as  
 efficient as **viral** vectors, nonviral systems such as lipidic  
 vectors have the potential advantages of being less toxic, nonrestrictive  
 in cargo DNA size, potentially targetable, and easy to produce in  
 relatively large amounts. More important, lipidic vectors generally lack  
 immunogenicity, allowing repeated in vivo transfection using the same  
 vector. In this paper, we will attempt to summarize some of the recent  
 advances in lipidic gene delivery vectors. Three types of lipidic gene  
 transfer vectors are described: 1) DNA/**cationic liposome**  
 complexes, 2) DNA **encapsulated** in neutral or anionic liposomes,  
 and 3) liposome-entrapped, polycation-condensed DNA (LPDI and LPDII). We  
 review the various factors affecting vector structure and gene delivery  
 efficiency, and we discuss the possible mechanisms of gene transfer and  
 their implications in vector design.

L9 ANSWER 15 OF 29 MEDLINE  
 AN 1999291932 MEDLINE  
 DN 99291932 PubMed ID: 10365810  
 TI Gene transfer to the rat biliary tract with the HVJ-**cationic liposome** method.  
 AU Uehara T; Honda K; Hatano E; Terao R; Iimuro Y; Yamamoto N; Yamamoto M; Kaneda Y; Yamaoka Y  
 CS Department of Gastroenterological Surgery, Kyoto University, Graduate School of Medicine, Japan.. tetsuzo@kuhp.kyoto-u.ac.jp  
 SO JOURNAL OF HEPATOLOGY, (1999 May) 30 (5) 836-42.  
 Journal code: 8503886. ISSN: 0168-8278.  
 CY Denmark  
 DT Journal; Article; (JOURNAL ARTICLE)  
 LA English  
 FS Priority Journals  
 EM 199907  
 ED Entered STN: 19990806  
 Last Updated on STN: 19990806  
 Entered Medline: 19990723  
 AB BACKGROUND/AIMS: The ability to transfer foreign genes into the biliary tract would be useful for the treatment of biliary tract diseases, including cancer, cystic fibrosis and other genetic diseases. To introduce a foreign gene precisely into the rat biliary epithelial cells, we developed a new technique, inserting a polyethylene catheter into the common bile duct through the papilla of Vater by use of a fusigenic **cationic liposome** with hemagglutinating virus of Japan (HVJ-**cationic liposome**). METHODS: Transfection efficiency was estimated with the use of FITC-oligonucleotides (FITC-ODNs) and cDNA of beta-galactosidase (pCAG-lacZ). RESULTS: FITC-ODNs **encapsulated** in HVJ-**cationic liposome** were effectively transfected into cell nuclei of human cholangiocellular carcinoma in vitro after a 30-min incubation as compared with the simple application of naked FITC-ODNs. After in vivo injection of FITC-ODNs using the HVJ-**cationic liposome** method through the papilla of Vater, fluorescence accumulation was observed only in the epithelial cells of the biliary tract, but not in the parenchymal cells of the liver. Beta-galactosidase expression was observed in the biliary epithelial cells 3 days after the transfection of pCAG-lacZ and was also detected at 14 days, but not at 28 days, without obvious cytotoxicity. CONCLUSIONS: HVJ-**cationic liposome**-mediated gene transfer to the biliary tract via the papilla of Vater is a minimally-invasive and an effective gene-delivery method for site-specific targeting to the epithelial cells of the biliary tract, which could be applied to the treatment of human biliary tract diseases.

DUPLICATE 7

L9 ANSWER 8 OF 29 CAPLUS COPYRIGHT 2002 ACS  
 AN 2000:145054 CAPLUS  
 DN 132:176589  
 TI Cationic complexes of polymer-modified **adenovirus** vectors  
 IN Wadsworth, Samuel C.; O'Riordan, Catherine E.  
 PA Genzyme Corporation, USA  
 SO PCT Int. Appl., 73 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000011202	A1	20000302	WO 1999-US19162	19990823
	W: AU, CA, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9956857	A1	20000314	AU 1999-56857	19990823
	EP 1108048	A1	20010620	EP 1999-943838	19990823
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002523054	T2	20020730	JP 2000-566454	19990823
PRAI	US 1998-97653P	P	19980824		
	WO 1999-US19162	W	19990823		

AB An **adenovirus** complex including a complex of a cationic mol. and of an **adenovirus** having at least one polyalkylene glycol polymer **bound** thereto. The polyalkylene glycol polymer includes, but is not limited to, polyethylene glycol, methoxypolyethylene glycol, polymethylethylene glycol, polyhydroxypropylene glycol, polypropylene glycol, and polymethylpropylene glycol. Mol. wts. for the polymer range from 200 to 20,000 Daltons, with 2000 to 12,000 Daltons being preferred. The **adenovirus** is a preferably recombinant **adenoviral** vector such as a recombinant **viral** vector contg. a transgene. The polymer is **bound**, directly or indirectly, to the **virus** particle by covalent or noncovalent means. The cationic mol. is preferably a cationic polymer, such as DEAE-Dextran, or a **cationic lipid**. A compn. contg. the **adenovirus** complex and a carrier is also disclosed. The complexes of the invention exhibit reduced immunogenicity.

L9 ANSWER 1 OF 29 MEDLINE DUPLICATE 1  
 AN 2002253956 MEDLINE  
 DN 21969385 PubMed ID: 11973632  
 TI Characterisation of LMD **virus**-like nanoparticles self-assembled from cationic liposomes, **adenovirus** core peptide mu and plasmid DNA.  
 AU Tagawa T; Manvell M; Brown N; Keller M; Perouzel E; Murray K D; Harbottle R P; Tecle M; Booy F; Brahimi-Horn M C; Coutelle C; Lemoine N R; Alton E W F W; Miller A D  
 CS Imperial College Genetic Therapies Centre, Department of Chemistry, Imperial College of Science, Technology and Medicine, London, UK.  
 SO GENE THERAPY, (2002 May) 9 (9) 564-76.  
 Journal code: 9421525. ISSN: 0969-7128.  
 CY England: United Kingdom  
 DT Journal; Article; (JOURNAL ARTICLE)  
 LA English  
 FS Priority Journals  
 EM 200205  
 ED Entered STN: 20020508  
 Last Updated on STN: 20020514  
 Entered Medline: 20020513  
 AB Liposome:mu:DNA (LMD) is a ternary nucleic acid delivery system built around the mu peptide associated with the condensed core complex of the **adenovirus**. LMD is prepared by precondensing plasmid DNA (D) with mu peptide (M) in a 1:0.6 (w/w) ratio and then combining these mu:DNA (MD) complexes with extruded cationic liposomes (L) resulting in a final lipid:mu:DNA ratio of 12:0.6:1 (w/w/w). Correct buffer conditions, reagent concentrations and rates of mixing are all crucial to success. However, once optimal conditions are established, homogeneous LMD particles (120 +/- 30 nm) will result that each appear to comprise an MD particle **encapsulated** within a cationic bilamellar liposome. LMD particles can be formulated reproducibly, they are amenable to long-term storage (>1 month) at -80 degrees C and are stable to aggregation at a plasmid DNA concentration up to 5 mg/ml (15 mM nucleotide concentration). Furthermore, LMD transfections are significantly more time and dose efficient in vitro than **cationic liposome**-plasmid DNA (LD) transfections. Transfection times as short as 10 min and plasmid DNA doses as low as 0.001 microg/well result in significant gene expression. LMD transfections will also take place in the presence of biological fluids (eg up to 100% serum) giving 15-25% the level of gene expression observed in the absence of serum. Results from confocal microscopy experiments using fluorescent-labelled LMD particles suggest that endocytosis is not a significant barrier to LMD transfection, although the nuclear membrane still is. We also confirm that topical lung transfection in vivo by LMD is at least equal in absolute terms with transfection mediated by GL-67:DOPE:DMPE-PEG(5000) (1:2:0.05 m/m/m), an accepted 'gold-standard' non-**viral** vector system for topical lung transfection, and is in fact at least six-fold more dose efficient. All these features make LMD an important new non-**viral** vector platform system from which to derive tailor-made non-**viral** delivery systems by a process of systematic modular upgrading.



L12 ANSWER 7 OF 28 BIOTECHDS COPYRIGHT 2002 THOMSON DERWENT AND ISI  
AN 2001-14354 BIOTECHDS  
TI Nucleic acid delivery complex for delivering nucleic acids to cells such  
as neuronal, cancer, epithelial cells, comprises **cationic**  
**lipid**/protein/nucleic acid complex comprising **viral**  
packaging proteins;  
nucleic acid vaccine delivery and gene therapy  
AU Tagawa T; Miller A D; Perouzel E; Murray K; Manvell M; Alton E; Matthews  
D; Russell W  
PA Mitsubishi-Tokyo-Pharmaceuticals  
LO Tokyo, Japan.  
PI WO 2001048233 5 Jul 2001  
AI WO 2000-GB4767 12 Dec 2000  
PRAI GB 1999-30533 23 Dec 1999  
DT Patent  
LA English  
OS WPI: 2001-441719 [47]  
AB A non-**viral** nucleic acid delivery vector (I) comprising a  
**condensed** polypeptide/nucleic acid complex and a **cationic**  
**lipid**, is claimed, where the complex comprises a nucleic acid  
sequence of interest and one or more **virus** nucleic acid  
packaging proteins, or their derivatives capable of binding to and  
**condensing** the nucleic acid of interest, which is heterologous to  
the protein. Also claimed are: a **condensed** protein/nucleic  
acid complex (II); producing (I) by contacting the nucleic acid of  
interest with a **virus** nucleic acid packaging protein or its  
derivative and contacting the nucleic acid/protein complex formed with a  
**cationic lipid**; and use of a **virus** nucleic  
acid packaging protein or its derivative in the manufacture of (I). (I)  
and (II) are used to introduce a nucleic acid of interest into a  
eukaryotic cell, especially a neuronal, cancer or epithelium cell. (I)  
and (II) can be used in gene therapy, nucleic acid vaccine delivery and  
in vitro transfection studies. (71pp)